DETERMINING ERRORS IN FORMS USING EYE MOVEMENT

BACKGROUND

[0001] The present invention relates generally to the field of data processing, and more particularly to help presentations within an operator interface.

[0002] Entities use forms for a variety of purposes (e.g., employment questionnaires, satisfaction surveys, internal reporting, etc.). Many entities are increasingly employing forms that users can complete on a mobile computing device. However, form inputs generally include errors when completed by using a mobile computing device, such as a smartphone.

[0003] Eye tracking technology enables measurement of the direction of an individual's gaze. Some mobile computing devices have incorporated eye-tracking technology.

SUMMARY

[0004] According to an aspect of the present invention, there is a method, computer program product, and/or system that performs the following operations (not necessarily in the following order): (i) receiving a set of responses to a set of input fields in a form; (ii) tracking a set of eye movements, across the form, of a user correlating to receipt of the set of responses; and (iii) informing the user of a set of possible errors in the set of responses. The set of possible errors is based, at least in part, on the set of responses and the set of eye movements. At least tracking a set of eye movements is performed by computer software running on computer hardware.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. **1** is a block diagram view of a first embodiment of a system according to the present invention;

[0006] FIG. **2** is a flowchart showing a first embodiment method performed, at least in part, by the first embodiment system;

[0007] FIG. **3** is a block diagram view of a machine logic (e.g., software) portion of the first embodiment system; and

[0008] FIG. **4** is a screenshot view of a form to be completed on a second embodiment of a system according to the present invention.

DETAILED DESCRIPTION

[0009] Tracking eye movement during the completion of a form on a mobile computing device to determine possible errors and suggest changes to the form. To improve data quality, eye-tracking data is used to determine input fields on a form that cause issues for a user; based on the eye tracking data, suggestions are made to change a response or to modify the form. This Detailed Description section is divided into the following sub-sections: (i) Hardware and Software Environment; (ii) Example Embodiment; (iii) Further Comments and/or Embodiments; and (iv) Definitions.

I. Hardware and Software Environment

[0010] The present invention may be a system, a method, and/or a computer program product. The computer program product may include a computer readable storage medium (or media) having computer readable program instructions thereon for causing a processor to carry out aspects of the present invention.

[0011] The computer readable storage medium can be a tangible device that can retain and store instructions for use by an instruction execution device. The computer readable storage medium may be, for example, but is not limited to, an electronic storage device, a magnetic storage device, an optical storage device, an electromagnetic storage device, a semiconductor storage device, or any suitable combination of the foregoing. A non-exhaustive list of more specific examples of the computer readable storage medium includes the following: a portable computer diskette, a hard disk, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory (EPROM or Flash memory), a static random access memory (SRAM), a portable compact disc read-only memory (CD-ROM), a digital versatile disk (DVD), a memory stick, a floppy disk, a mechanically encoded device such as punch-cards or raised structures in a groove having instructions recorded thereon, and any suitable combination of the foregoing. A computer readable storage medium, as used herein, is not to be construed as being transitory signals per se, such as radio waves or other freely propagating electromagnetic waves, electromagnetic waves propagating through a waveguide or other transmission media (e.g., light pulses passing through a fiber-optic cable), or electrical signals transmitted through a wire.

[0012] Computer readable program instructions described herein can be downloaded to respective computing/processing devices from a computer readable storage medium or to an external computer or external storage device via a network, for example, the Internet, a local area network, a wide area network and/or a wireless network. The network may comprise copper transmission cables, optical transmission fibers, wireless transmission, routers, firewalls, switches, gateway computers and/or edge servers. A network adapter card or network interface in each computing/processing device receives computer readable program instructions from the network and forwards the computer readable program instructions for storage in a computer readable storage medium within the respective computing/processing device.

[0013] Computer readable program instructions for carrying out operations of the present invention may be assembler instructions, instruction-set-architecture (ISA) instructions, machine instructions, machine dependent instructions, microcode, firmware instructions, state-setting data, or either source code or object code written in any combination of one or more programming languages, including an object oriented programming language such as Smalltalk, C++ or the like, and conventional procedural programming languages, such as the "C" programming language or similar programming languages. The computer readable program instructions may execute entirely on the user's computer, partly on the user's computer, as a stand-alone software package, partly on the user's computer and partly on a remote computer or entirely on the remote computer or server. In the latter scenario, the remote computer may be connected to the user's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider). In some embodiments, elec-